

### **ABSTRACT**

A fuel cell assembly including a membrane electrode assembly, an anode plate, a cathode plate, a removable fuel cartridge, and a fuel delivery system. The assembly includes an anode, a cathode, and a polymer electrolyte membrane having a fuel side and an oxygen side. The fuel cartridge includes an expandable fuel bladder for receiving liquid fuel, an expandable pressure member in contact with the bladder for maintaining a positive pressure on the bladder, and a sealable exit port in fluid communication with the bladder. The fuel delivery system delivers fuel from the cartridge to the fuel side of the membrane. The removable fuel cartridge includes a rigid fuel container having a first container portion and a second container portion permanently enclosing the expandable fuel bladder and the expandable pressure member. The first container portion and the second container portion may be permanently affixed to one another with an adhesive.

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